



## A study of the dengue epidemic and meteorological factors in Guangzhou, China, by using a zero-inflated Poisson Regression Model

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### Abstract:

The aim of this study is to develop a model that correctly identifies and quantifies the relationship between dengue and meteorological factors in Guangzhou, China. By cross-correlation analysis, meteorological variables and their lag effects were determined. According to the epidemic characteristics of dengue in Guangzhou, those statistically significant variables were modeled by a zero-inflated Poisson regression model. The number of dengue cases and minimum temperature at 1-month lag, along with average relative humidity at 0- to 1-month lag were all positively correlated with the prevalence of dengue fever, whereas wind velocity and temperature in the same month along with rainfall at 2 months' lag showed negative association with dengue incidence. Minimum temperature at 1-month lag and wind velocity in the same month had a greater impact on the dengue epidemic than other variables in Guangzhou.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Meteorological Factors, Precipitation, Temperature

#### Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

#### Geographic Location:

resource focuses on specific location

Non-United States

**Non-United States:** Asia

**Asian Region/Country:** China

#### Health Impact:

# Climate Change and Human Health Literature Portal

specification of health effect or disease related to climate change exposure

Infectious Disease

**Infectious Disease:** Vectorborne Disease

**Vectorborne Disease:** Mosquito-borne Disease

**Mosquito-borne Disease:** Dengue

**Mitigation/Adaptation:** 

mitigation or adaptation strategy is a focus of resource

Adaptation

**Resource Type:** 

format or standard characteristic of resource

Research Article

**Timescale:** 

time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment:** 

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content